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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,852	09/18/2003	Harry Littlejohn	INC-003	8396
25962	7590	08/23/2006	EXAMINER	
SLATER & MATSIL, L.L.P. 17950 PRESTON RD, SUITE 1000 DALLAS, TX 75252-5793			LEUNG, WAI LUN	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Period for Reply

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.

- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 040104.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
5. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Number 6,813,446 to Melenez et al., in view of US Patent Number 6,609,037 to Bless et al.

Regarding to claims 1 and 8, Melenez discloses a beam control processor (*114, fig 1*) for use with a transceiver (*100, fig 1; col 4, ln 44-58*) employing a sensor (*304, fig 3a*) and capable of transmitting a laser beam to an other transceiver (*col 6, ln 45-52*), comprising: a line-of-sight estimation subsystem configured to provide a line-of-sight pointing vector of said laser beam based motion data (*col 6, ln 27-29, a series of line-of-sight vector forms the raster pattern 302 over time, to determine position and motion data of the laser beam*) provided by said sensor (*col 6, ln 38-44*); and a line-of-sight control subsystem configured to generate beam steering commands for said transceiver as a function of said line-of-sight pointing vector (*col 6, ln 38-52*).

Melenez does not disclose expressly wherein the sensor is an inertial sensor providing acceleration inertial motion data.

Bless, from the same field of endeavor (*col 3, ln 58-62 stated that the invention can be used in an optical system*), teaches a stabilization control system comprising an inertial sensor (*col 5, ln 8-12*) to provide a line-of-sight pointing vector (*col 3, ln 49-54*) based on acceleration inertial motion data (*col 5, ln 17-25, where the rate of movement is acceleration*). Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to use an inertial sensor to provide a line-of-sight pointing vector based on acceleration inertial motion data onto Melenez's system as taught by Bless. The motivation for doing so would have been to have the pointing vector maintains its lock on the target even when its housing moves and rotates (*Bless, col 3, ln 54-56*).

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Claim 15 is rejected for the same reasons as stated above regarding claims 1 and 8, because in addition to the limitations in claims 1 and 8, Melendez teaches a transceiver, comprising:

a housing (*102, fig 1*) that provides a foundation for said transceiver (*100, fig 1*);

a transmitter element (*108, fig 1*) configured to transmit a transmitted laser beam to an other transceiver (*transceiver 202 transmit to transceiver 204, fig 2*);

a receiver element (*110, fig 1*) configured to receive a received laser beam from an other transceiver (*fig 2*); and

a control processor (*114, fig 1*), coupled to said transmitter and receiver elements (*fig 1*), configured to provide beam steering control for said transmitter element and orientation control for said receiver element (*col 4, ln 42-64*), including a beam control processor as discussed above regarding claims 1 and 8;

Bless further teaches an inertial sensor (*col 2, ln 21-29*), coupled to a housing (*col 1, ln 17-19*), configured to provide acceleration inertial motion data associated with said transceiver (*col 2, ln 40-57*);

It would have been obvious to combine Melenez and Bless for the same reason as stated regarding claims 1 and 8.

As to claims 2, 9, and 16, Melenez further teaches wherein said line-of-sight estimation subsystem is configured to provide said line-of-sight pointing vector of said laser beam based on receiver orientation feedback data and transmit position feedback data associated with said transceiver (*col 6, ln 38-52*).

As to claims 3, 10, and 17, Melenez further teaches the beam control processor as recited in claim 1 and its associated method of claim 8 further comprising a coordinate transform subsystem (*fig 5*) configured to provide line-of-sight data about said other transceiver based on outer control loop data including a line-of-sight pointing data and an inertial motion of said other transceiver (*col 6, ln 46-col 7, ln 4*).

As to claims 4, 11, and 18, Melenez further teaches the beam control processor as recited in claim 3 and its associated method of claim 10 further comprising a relative line-of-sight estimation subsystem (*light pipes as shown in fig 5*) configured to provide line-of-sight commands based on said line-of-sight data about said other transceiver and said line-of-sight pointing vector associated with said transceiver (*col 7, ln 4-9*).

As to claims 5, 12, and 19, Melenez further teaches wherein said line-of-sight control subsystem is configured to provide said beam steering commands based on said line-of-sight commands and a beam center error associated with said other transceiver (*col 6, ln 38-52, where "movement away from center of pattern 302" is the error associated with said other transceiver*).

As to claims 6, 13, and 20, Melenez further teaches the beam control processor as recited in claim 1 further comprising a residual beam centering error subsystem configured to provide outer control loop data based on line-of-sight data and a beam centering error of said transceiver (*col 6, ln 7-20*).

As to claims 7, 14, and 21, Melenez further teaches wherein said line-of-sight control subsystem is configured to provide receiver orientation commands as a function of said line-of-sight pointing vector (*col 6, ln 12-19*).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to Optical Alignment apparatus in general:

US Patent No. 6,384,944 to Takayama et al. discloses an integral transmitter-receiver optical communication apparatus.

US Patent Application Publication No. 2002/0054411 to Heminger et al. discloses a method and apparatus for aligning optical wireless links.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Wai Lun Leung whose telephone number is (571) 272-5504. The examiner can normally be reached on 9:30am-7:00pm Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DWL

August 17, 2006